AIR QUALITY PERMIT

Issued To: Havre Pipeline Company, LLC
PO Box 2606
Havre, Montana 59501

Permit: # 3145-02
Application Complete: 05/24/04
Preliminary Determination Issued: 07/01/04
Department's Decision Issued: 07/19/04
Permit Final: 08/04/04
AFS #: 005-0013

An air quality permit, with conditions, is hereby granted to Havre Pipeline Company, LLC (HPC) for the Blaine County #5 Compressor Station, pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and Administrative Rules of Montana (ARM) 17.8.740, *et seq*., as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

The Blaine County #5 compressor station is located approximately 12 miles north of Chinook in the SE¼ of the SE¼ of Section 19, Township 35 North, Range 20 East in Blaine County, Montana. A listing of the permitted equipment is contained in Section I.A of the permit analysis.

B. Current Permit Action

On May 24, 2004, HPC submitted a complete permit application for the modification of Montana Air Quality Permit #3145-01. Specifically, HPC proposed to replace the existing 738 horsepower (hp) Waukesha 3521GSI compressor engine with a 250-hp Waukesha F11GSI compressor engine. The current permit action replaces the 738-hp Waukesha 3521GSI compressor engine with a 250-hp Waukesha F11GSI compressor engine.

SECTION II. Conditions and Limitations

A. Emission Limitations

1. Emissions from the 250-hp Waukesha F11GSI rich-burn natural gas-fired compressor engine shall be controlled by a Non-Selective Catalytic Reduction (NSCR) unit and an Air-Fuel Ratio (AFR) controller. Emissions from the compressor engine shall not exceed the following limits (ARM 17.8.752):

NO_x[1]	0.55 pounds per hour (lb/hr)
CO	0.28 lb/hr
VOC	0.55 lb/hr

2. HPC shall operate all equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.749).

3. HPC shall not cause or authorize emissions to be discharged into the outdoor atmosphere from any sources installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6-consecutive minutes (ARM 17.8.304).

[1] NO_x reported as NO_2.

4. HPC shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

5. HPC shall treat all unpaved portions of the haul roads, access roads, parking lots, or general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.4 (ARM 17.8.749).

B. Testing Requirements

1. HPC shall initially test the 250-hp Waukesha compressor engine for NO_x and CO concurrently, to demonstrate compliance with the emission limits in Section II.A.1, within 180 days of the initial start up date of the compressor engine. Further testing shall continue on an every 4-year basis or according to another testing/monitoring schedule as may be approved by the Department of Environmental Quality (Department) (ARM 17.8.105 and ARM 17.8.749).

2. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

3. The Department may require further testing (ARM 17.8.105).

C. Operational Reporting Requirements

1. HPC shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used to calculate operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. HPC shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by HPC as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Notification

HPC shall provide the Department with written notification of the following information within the specified time periods:

1. Commencement of construction of the 250-hp Waukesha F11GSI compressor engine within 30 days after the commencement of construction (ARM 17.8.749).

2. Actual start-up date of the 250-hp Waukesha F11GSI compressor engine within 15 days after the actual start-up date of the engine (ARM 17.8.749).

SECTION III: General Conditions

A. Inspection – HPC shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if HPC fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving HPC of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department's decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by HPC may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

Permit Analysis
Havre Pipeline Company, LLC
Blaine County #5 Compressor Station
Permit #3145-02

I. Introduction/Process Description

A. Permitted Equipment

Havre Pipeline Company, LLC's (HPC) Blaine County #5 Compressor Station consists of the following equipment:

1. (1) 250-horsepower (hp) Waukesha F11GSI natural gas-fired compressor engine
2. (1) ALCO Dehydrator including a still vent, reboiler, and flash tank
3. Associated equipment

B. Source Description

The natural gas compressor station is located approximately 12 miles north of Chinook in the SE¼ of the SE¼ of Section 19, Township 35 North, Range 20 East, Blaine County, Montana. The facility is known as the Blaine County #5 Compressor Station.

The main purpose of this facility is to gather and transmit natural gas using a reciprocating natural gas-fired engine, which drives a gas compressor. The dehydrator unit removes moisture from the natural gas before transmitting the gas downstream for further processing.

C. Permit History

On March 10, 2001, Permit **#3145-00** was issued to Klabzuba Oil & Gas, Inc. (Klabzuba) for the construction and operation of the Dry Fork Compressor Station located approximately 12 miles north of Chinook in the SE¼ of the SE¼ of Section 19, Township 35 North, Range 20 East in Blaine County, Montana.

On May 3, 2001, Klabzuba requested that Permit #3145-00 be transferred to HPC. In addition, HPC requested the facility be referred to as Blaine County #5 Compressor Station rather than the Dry Fork Compressor Station. The permit action transferred the permit from Klabzuba to HPC and changed the name of the compressor station from Dry Fork to Blaine County #5. Permit **#3145-01** replaced Permit #3145-00.

D. Current Permit Action

On May 24, 2004, the Department of Environmental Quality (Department) received a complete application from HPC for the modification of Montana Air Quality Permit #3145-01. The current permit action replaces the previously permitted 738-hp Waukesha 3521GSI compressor engine with a 250-hp Waukesha F11GSI compressor engine. Permit **#3145-02** replaces Permit #3145-01.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1 – General Provisions, including but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment (including instruments and sensing devices) and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   HPC shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means that, without resulting in reduction of the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2 – Ambient Air Quality, including, but not limited to the following:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.213 Ambient Air Quality Standard for Ozone
6. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
7. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
8. ARM 17.8.221 Ambient Air Quality Standard for Visibility
9. ARM 17.8.222 Ambient Air Quality Standard for Lead
10. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
11. ARM 17.8.230 Fluoride in Forage

HPC must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3 – Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, HPC shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this rule.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this rule.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. Commencing July 1, 1971, no person shall burn any gaseous fuel containing sulfur compounds in excess of 50 grains per 100 cubic feet of gaseous fuel, calculated as hydrogen sulfide at standard conditions. HPC will consume pipeline quality natural gas, which will meet this limitation.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR 60, Standards of Performance for New Stationary Sources (NSPS). This facility is not an NSPS affected source because it does not meet the definition of any NSPS subpart defined in 40 CFR 60

   HPC is not an NSPS affected source because it does not meet the definition of a natural gas processing plant defined in 40 CFR 60, Subpart KKK.

8. ARM 17.8.342 Emission Standards for Hazardous Air Pollutants for Source Categories. The source, as defined and applied in 40 CFR 63, shall comply with the requirements of 40 CFR 63, as listed below:

   40 CFR 63, Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities. Owners or operators of oil and natural gas production facilities, as defined and applied in 40 CFR Part 63, shall comply with the applicable provisions of 40 CFR Part 63, Subpart HH. In order for a natural gas production facility to be subject to 40 CFR Part 63, Subpart HH requirements, certain criteria must be met. First, the facility must be a major source of Hazardous Air Pollutants (HAP) as determined according to paragraphs (a)(1)(i) through (a)(1)(iii) of 40 CFR 63, Subpart HH. Second, a facility that is determined to

be major for HAPs must also either process, upgrade, or store hydrocarbon liquids prior to the point of custody transfer, or process, upgrade, or store natural gas prior to the point at which natural gas enters the natural gas transmission and storage source category or is delivered to a final end user. Third, the facility must also contain an affected source as specified in paragraphs (b)(1) through (b)(4) of 40 CFR Part 63, Subpart HH. Finally, if the first three criteria are met, and the exemptions contained in paragraphs (e)(1) and (e)(2) of 40 CFR Part 63, Subpart HH do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HH. Based on the information submitted by HPC, the compressor station is not subject to the provisions of 40 CFR Part 63, Subpart HH because the facility is not a major source of HAPs.

40 CFR 63, Subpart HHH National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities. Owners or operators of natural gas transmission or storage facilities, as defined and applied in 40 CFR Part 63, shall comply with the standards and provisions of 40 CFR Part 63, Subpart HHH. In order for a natural gas transmission and storage facility to be subject to 40 CFR Part 63, Subpart HHH requirements, certain criteria must be met. First, the facility must transport or store natural gas prior to the gas entering the pipeline to a local distribution company or to a final end user if there is no local distribution company. Second, the facility must be a major source of HAPs as determined using the maximum natural gas throughput as calculated in either paragraphs (a)(1) and (a)(2) or paragraphs (a)(2) and (a)(3) of 40 CFR Part 63, Subpart HHH. Third, a facility must contain an affected source (glycol dehydration unit) as defined in paragraph (b) of 40 CFR Part 63, Subpart HHH. Finally, if the first two criteria are met, and the exemptions contained in paragraph (f) of 40 CFR Part 63, Subpart HHH, do not apply, the facility is subject to the applicable provisions of 40 CFR Part 63, Subpart HHH. Based on the information submitted by HPC, the compressor station is not subject to the provisions of 40 CFR 63, Subpart HHH because the facility is not a major source of HAPs.

D. ARM 17.8, Subchapter 5 – Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. HPC submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 When Permit Required--Exclusions. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that prorate the required fee amount.

E. ARM 17.8, Subchapter 7 – Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit alteration to construct, alter or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. HPC has an uncontrolled PTE greater than 25 tons per year of carbon monoxide (CO) and nitrogen oxides (NOx); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, alteration or use of a source. HPC submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. HPC submitted an affidavit of publication of public notice for the May 7, 2004, issue of the *Havre Daily News*, a newspaper of general circulation in the Town of Havre, Montana, in Blaine County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving HPC of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8 – Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source since this facility is not a listed source and the facility's PTE is below 250 tons per year of any pollutant (excluding fugitive emissions).

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

a. PTE > 100 tons/year of any pollutant;

b. PTE > 10 tons/year of any one HAP, PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

c. PTE > 70 tons/year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #3145-02 for HPC, the following conclusions were made:

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is not subject to any current NSPS.

   e. This facility is not subject to any current NESHAP standards.

   f. This source is not a Title IV affected source, nor a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

   Based on these facts, the Department determined that HPC will be a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, HPC will be required to obtain a Title V Operating Permit.

III. BACT Determination

A BACT determination is required for each new or altered source. HPC shall install on the new or altered source the maximum air pollution control that is technically practicable and economically feasible, except that BACT shall be utilized. A BACT determination is required for each new or modified source. The BACT analysis addresses the available methods for controlling CO, NO_x, volatile organic compounds (VOC), PM_{10}, and sulfur dioxide (SO_2) emissions from the proposed project. The Department reviewed previous BACT determinations for compressor engines before making the following BACT determinations.

A. CO BACT

1. Rich-Burn with an Non-Selective Catalytic Reduction (NSCR) Unit and an Air to Fuel Ratio Controller (AFR)

   An NSCR unit controls NO_x emissions by using the CO and the residual hydrocarbons in the exhaust of a rich-burn engine as a reducing agent for NO_x. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO_x. As the excess hydrocarbon and NO_x pass over a honeycomb or monolithic catalyst (usually a combination of noble metals such as platinum, palladium, and/or rhodium), the reactants are reduced to nitrogen (N_2), water (H_2O), and carbon dioxide (CO_2). The noble metal catalyst usually operates between 800 degrees Fahrenheit (°F) and 1,200°F; therefore, the unit would normally be mounted near the engine exhaust to maintain a high enough temperature to allow the various reactions to occur. In order to achieve maximum performance, 80% to 90% reduction of NO_x concentration, the engine needs to burn a rich fuel mixture, causing the engine to operate less efficiently.

In order to provide the most effective use of the catalyst in an NSCR unit, it is necessary to install an electronic AFR controller. This device maintains the proper air to fuel ratio that will optimize the degree of reducing agents in order to provide maximum emission reduction while minimizing agents that can poison the catalyst. A rich-burn engine with an NSCR unit and an AFR Controller is capable of achieving a CO emission limit of 0.28 pounds per hour (lb/hr), which corresponds to an emission factor 0.5 grams per brake horsepower hour (g/bhp-hr).

2. Lean-Burn Engine with Catalytic Oxidation Unit

   Catalytic Oxidation is a post combustion technology that has been applied to oxidize CO emissions from lean-burn engines. As mentioned in Section III.A.4 of this permit analysis, lean-burn technologies may cause increased CO emissions. In a catalytic oxidation system, CO passes over a catalyst, usually a noble metal, which oxidizes the CO to carbon dioxide (CO_2) at efficiencies of 70-90%. A lean-burn engine with a catalytic oxidation unit is capable of achieving a CO emission limit of 0.28 lb/hr, which corresponds to an emission factor of 0.5 g/bhp-hr.

3. Lean-Burn Engine with an AFR Controller

   Installing an electronic AFR controller can stabilize both CO and NO_x emissions from a lean-burn engine. This device maintains the proper air to fuel ratio that will optimize the performance of the lean burn engine. In this process, the proper air-to-fuel ratio is obtained by adjusting the engine to operate at the crossover point, where NO_x and CO emissions are equal. At the crossover point, the engine operates neither too lean nor too rich. Excess hydrocarbon in a rich fuel mixture causes incomplete combustion; thus, lowering the exhaust temperature to a point where the concentration of NO_x decreases, but the concentration of CO increases. Combustion of a lean fuel mixture occurs at higher temperatures accompanied by higher concentration of NO_x but a lower concentration of CO. An engine can operate manually at the crossover point; however, the engine must be tuned frequently to account for operational changes such as varying engine load, operating temperature, fuel gas quality, etc.

   A lean-burn engine with an AFR controller achieves approximately the same reduction in emissions as a rich-burn engine fitted with an NSCR unit and an AFR controller. However, a rich-burn engine fitted with a NSCR and AFR typically achieves a higher total reduction in potential uncontrolled emissions than the lean-burn engine with an AFR controller.

4. Lean-Burn Engine with Catalytic Oxidation and AFR Controller

   As stated above, catalytic oxidation on a lean-burn engine can achieve CO control efficiencies between 70-90%. The addition of an AFR controller will ensure that the engine operates in the appropriate air-to-fuel ration resulting in more stable control of the catalytic oxidizer.

5. Rich-Burn with NSCR Unit

   An NSCR unit controls NO_x emissions by using the CO and the residual hydrocarbons in the exhaust of a rich-burn engine as a reducing agent for NO_x. Without the catalyst, in the presence of oxygen, the hydrocarbons will be oxidized instead of reacting with NO_x. As the excess hydrocarbon and NO_x pass over a honeycomb or monolithic catalyst (usually a

combination of noble metals such as platinum, palladium, and/or rhodium), the reactants are reduced to nitrogen (N_2), water (H_2O), and carbon dioxide (CO_2). The noble metal catalyst usually operates between 800 degrees Fahrenheit (°F) and 1,200°F; therefore, the unit would normally be mounted near the engine exhaust to maintain a high enough temperature to allow the various reactions to occur. In order to achieve maximum performance, 80% to 90% reduction of NO_x concentration, the engine needs to burn a rich fuel mixture, causing the engine to operate less efficiently

A rich-burn engine fitted with a NSCR unit alone operates less efficient, does not provide as high a reduction in NO_x or CO emissions, and consumes more fuel than a rich-burn engine fitted with a NSCR unit and an AFR controller. In order to provide the most effective use of the catalyst in an NSCR unit, it is necessary to install an electronic AFR controller. This device maintains the proper air to fuel ratio that will optimize the degree of reducing agents in order to provide maximum emission reduction while minimizing the agents that can poison the catalyst.

6. Rich-Burn with an AFR Controller (control at the crossover point)

   Under this control strategy, the proper air-to-fuel ratio is obtained by adjusting the engine to operate at the crossover point, where NO_x and CO emissions are equal. At the crossover point, the engine operation is neither too lean for too rich. Excess hydrocarbons in a rich fuel mixture cause incomplete combustion, thereby lowering the exhaust temperature to a point where the concentration of NO_x decreases and the concentration of CO increases. Conversely, combustion of a lean fuel mixture occurs at higher temperatures accompanied by a higher concentration of NO_x and a lower concentration of CO.

   Internal combustion engines can be operated manually at the crossover point; however, the engine must be tuned frequently to account for operational changes such as varying engine load, operating temperatures, fuel gas quality, etc. Use of an AFR controller to adjust the engine to operate at the crossover point results in a reasonable reduction of both NO_x and CO emissions. However, a rich-burn engine operated with an AFR controller alone cannot achieve the NO_x or CO emissions reductions that a rich-burn engine equipped with NSCR or a rich-burn engine equipped with NSCR and an AFR controller can achieve.

7. Rich-Burn Engine with Catalytic Oxidation

   Catalytic oxidation cannot be applied to rich-burn engines because of the inherently low oxygen concentrations of the exhaust stream. Excess oxygen is needed by the catalytic oxidizers to efficiently oxidize CO to CO_2. Catalytic Oxidation is not a technically feasible control option for rich-burn engines.

8. Lean-Burn Engine with a NSCR Unit

   As stated above, a NSCR unit can be used to oxidize CO to CO_2. However, in order to achieve maximum performance and the appropriate reduction of CO emissions, the engine must burn a rich fuel mixture causing the engine to operate less efficiently. NSCR is not generally considered a technically feasible control option on a lean-burn engine.

9. Lean-Burn Engine with No Additional Controls

   This practice would consist of operating the natural gas compressor engine without any add-on pollution control equipment. The lean-burn engine uses a pre-combustion chamber to enclose a rich mixture of air and fuel; the mixture is then ignited in this

chamber. The resulting ignition front fires into the larger main cylinder that contains a much leaner fuel mixture. Staging the combustion and burning a leaner fuel mixture results in lowering of peak flame temperatures. Lower combustion temperature assures lower NO_x concentration in the exhaust gas stream; however, excess air in the fuel to air mixture can result in increased CO emissions. CO emissions from a lean-burn engine with no additional controls are much higher than the CO emissions from a lean-burn engine with additional controls or a rich-burn engine with controls.

10. Rich-Burn Engine with No Additional Control

    A rich-burn natural gas compressor engine operated with no additional control equipment may fluctuate between rich fuel mixtures and lean fuel mixtures. This fluctuation makes it difficult to control both CO and NO_x emissions. CO emissions from a rich-burn engine with no additional controls are significantly higher than a lean-burn engine with no additional controls.

11. Summary

    While no additional controls would have no energy or economic impacts on HPC, no additional controls would have negative impacts on air quality. Therefore, the Department determined that no additional controls will not constitute BACT for the natural gas compressor engine.

    The Department determined that an NSCR unit with an AFR controller constitutes BACT for the reduction of CO emissions resulting from the operation of the proposed rich-burn natural gas compressor engine. NSCR/AFR control typically constitutes BACT for rich-burn compressor engines. Further, in this case the proposed rich-burn engine operating with NSCR and an AFR controller is capable of meeting the emission limits normally prescribed as BACT for the top lean-burn technology operated with an oxidation catalyst. NSCR/AFR control effectively reduces CO emissions from the proposed project with limited energy demands and represents a technically, economically, and environmentally feasible option. Further, it has been demonstrated that these technologies operated together are capable of achieving the pound per hour BACT CO emission limit established for the 250-hp Waukesha F11GSI rich-burn compressor engine (Section II.A.1 of Permit #3145-02). The pound per hour limit was established as BACT by using a CO emission factor of 0.5 g/hp-hr.

B. NO_x BACT

1. Lean-Burn Engine with a Selective Catalytic Reduction (SCR) Unit

   SCR is a post combustion technology that has been shown to be effective in reducing NO_x emissions from lean burn engines. SCR units can achieve NO_x control efficiencies as high as 90% for lean burn engines that are operated at a constant load. An SCR unit selectively reduces NO_x emissions by injecting either liquid anhydrous ammonia or aqueous ammonium hydroxide into the exhaust gas stream prior to the gas stream reaching the catalyst. The catalyst is typically made from noble metals, base metal oxides such as vanadium and titanium, and zeolite-based material. NO_x, ammonia (NH_3), and Oxygen (O_2) react on the surface of the catalyst to form N_2 and H_2O. For an SCR unit to operate properly, the exhaust gas must be within a particular temperature range (typically between 450°F and 850°F). The catalyst that is utilized dictates the temperature range. Exhaust gas temperatures greater than desired temperature range will allow the NO_x and NH_3 to

pass through the catalyst without reacting. NH_3 emissions, called ammonia slip, are a key consideration when specifying an SCR unit. A lean-burn engine with a SCR Unit is capable of achieving a NO_x emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr.

2. Lean-Burn Engine with a SCR Unit and AFR Controller

   A lean-burn engine with a SCR unit and an AFR controller will achieve equivalently the same NO_x emissions control as a lean-burn engine with only a SCR unit. However, the AFR controller will ensure that the engine operates at the appropriate air-to-fuel ratio resulting in more efficient engine operation and control.

3. Rich-Burn Engine with a NSCR Unit and AFR Controller

   A rich-burn engine with an NSCR Unit and an AFR Controller can achieve NO_x emissions comparable to a lean-burn engine with or without additional controls. A full description of this technology is contained in Section III.A.1 of this permit analysis. A rich-burn engine with a NSCR unit and AFR controller is capable of achieving a NO_x emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr.

4. Rich-Burn Engine with a NSCR Unit

   A rich-burn engine with a NSCR is capable of achieving the same control as a rich-burn engine with a NSCR and AFR controller. However, the AFR controller maintains the proper air-to-fuel ratio, which increases fuel efficiency, optimizes the use of reducing agents, and minimizes agents that can poison the catalyst.

5. Lean-Burn Engine with an AFR Controller

   A lean-burn engine with an AFR Controller is capable of achieving a NO_x emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0g/bhp-hr. A full description of this technology is contained in Section III.A.3 of this permit analysis.

6. Rich-Burn Engine with an AFR Controller

   Use of an AFR controller to adjust the engine to operate at the crossover point results in a reasonable reduction of NO_x emissions. However, a rich-burn engine operated with an AFR controller alone cannot achieve the NO_x emissions reductions that a rich-burn engine equipped with NSCR, a rich-burn engine equipped with NSCR and an AFR controller, a lean-burn engine with SCR, or a lean-burn engine with no controls can achieve. A full description of this technology is contained in Section III.A.6 of this permit analysis.

7. Lean-Burn Engine with No Additional Controls

   A lean-burn engine with no additional controls is capable of achieving a NO_x emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr. A full description of this technology is contained in Section III.A.9 of this permit analysis.

8. Rich-Burn Engine with No Additional Controls

   A rich-burn natural gas compressor engine operated with no additional control equipment may fluctuate between rich fuel mixtures and lean fuel mixtures. This fluctuation makes it difficult to control both CO and NO_x emissions. NO_x emissions from a rich-burn engine with no additional controls are significantly higher than a rich-burn engine with controls, a lean-burn engine with controls, or a lean-burn engine with no additional controls.

9. Rich-Burn Engine with a SCR Unit

   A rich-burn engine equipped with a SCR unit is technically infeasible because the oxygen concentration from rich-burn engines is not high enough for an SCR unit to operate properly.

10. Lean-Burn Engine with a NSCR Unit

    NSCR is not generally considered a technically feasible control option on a lean-burn engine because the engine must burn rich fuel mixture for optimum emissions control.

11. Summary

    While no additional controls would have no energy or economic impacts on HPC, no additional controls would have negative impacts on air quality. Therefore, the Department determined that no additional controls will not constitute BACT for the natural gas compressor engine.

    The Department determined that an NSCR unit with an AFR controller constitutes BACT for the reduction of NO_x emissions resulting from the operation of the proposed rich-burn natural gas compressor engine. NSCR/AFR control typically constitutes BACT for rich-burn compressor engines. Further, in this case the proposed rich-burn engine operating with NSCR and an AFR controller is capable of meeting the emission limits normally prescribed as BACT for the top lean-burn technology. NSCR/AFR control effectively reduces NO_x emissions from the proposed project with limited energy demands and represents a technically, economically, and environmentally feasible option. Further, it has been demonstrated that these technologies operated together are capable of achieving the pound per hour BACT NO_x emission limit established for the 250-hp Waukesha F11GSI rich-burn compressor engine (Section II.A.1 of Permit #3145-02). The pound per hour limit was established as BACT by using a NO_x emission factor of 1.0 g/hp-hr.

C. VOC BACT

   Summary

   The Department determined that a VOC emission limit of 0.55 lb/hr, which corresponds to an emission factor of 1.0 g/bhp-hr, constitutes BACT for VOC emissions resulting from the operation of the proposed natural gas compressor engines.

   The compressor engines proposed in this permitting action can achieve the BACT emission limits with no additional controls; therefore, HPC's proposal to use a rich-burn engine with NSCR/AFR control technology and good combustion practices and engineering design to effectively reduce VOC emissions is an economically and environmentally feasible option.

D. SO_2/PM_{10} BACT

   Summary

   The combustion of natural gas in the proposed rich-burn compressor engine produces very low PM_{10} and SO_2 emissions. Furthermore, the cost to control these emissions would be economically unreasonable. Therefore, the Department determined that no additional control would constitute BACT for the proposed project. HPC's proposal to utilize good combustion practices and engineering design is an economically and environmentally feasible option.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

IV. Emission Inventory

	Criteria Pollutant Emissions tons/year				
Emission Source	**PM_{10}**	**NO_x**	**CO**	**VOC**	**SO_x**
Waukesha F11GSI Compressor Engine	0.08	2.41	1.22	2.41	0.004
ALCO Dehydrator Unit	0.01	0.16	0.14	2.98	0.001
Total	0.09	2.57	1.36	5.39	0.005

Hazardous Air Pollutant (HAP) emissions for this source are negligible at 0.30 ton/yr. A complete HAP emission inventory is on file with the Department.

Waukesha F11GSI Compressor Engine

Heat Input Capacity: 1.9 MMBtu/hr (Company Information)
Annual Operation: 8760 hr/yr
Engine Power Output: 250 hp

PM_{10} Emissions:

Emission Factor: 9.91E-03 lb/MMBtu (AP-42, Section 3.2, Table 3.2-3, 07/00)
Calculations: 9.91E-03 lb/MMBtu * 1.9 MMBtu/hr = 0.019 lb/hr
0.023 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.08 ton/yr

NO_x Emissions:

Emission Factor: 1.0 g/hp-hr (Department BACT Determination)
Calculations: 1.0 g/hp-hr * 250 hp * 0.002205 lb/g = 0.55 lb/hr
0.55 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.41 ton/yr

CO Emissions:

Emission Factor: 0.5 g/hp-hr (Department BACT Determination)
Calculations: 0.5 g/hp-hr * 250 hp * 0.002205 lb/g = 0.28 lb/hr
0.28 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.22 ton/yr

VOC Emissions:

Emission Factor: 1.0 g/hp-hr (Department BACT Determination)
Calculations: 1.0 g/hp-hr * 250 hp * 0.002205 lb/g = 0.55 lb/hr
0.55 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.41 ton/yr

SO_x Emissions:

Emission Factor: 5.88E-04 lb/MMBtu (AP-42, Section 3.2, Table 3.2-3, 07/00)
Calculations: 5.88E-04 lb/MMBtu * 1.9 MMBtu/hr = 0.001 lb/hr
0.001 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.004 ton/yr

ALCOA Dehydrator Unit

Maximum Design Capacity: 0.375 Bhp
Hours of Operation: 8,760 hr/yr
Fuel Heating Value: 1,000 Btu/SCF or 0.0010 MMSCF/MMBtu
Fuel Combustion Rate: 0.375 MMBtu * 0.001 MMSCF/MMBtu * 8760 hr/yr = 3.285 MMSCF/yr {Manufacturers Data}

Reboiler

PM-10 Emissions:

Emission Factor: 7.6 lb/MMSCF {AP-42 Table 1.4-2 (7/98)}
Control Efficiency: 0%
Calculations: 7.6 lb/MMSCF * 3.285 MMScf/yr* 0.0005 ton/lb = 0.012 ton/yr

NO_x Emissions**:**

Emission Factor: 100 lb/MMSCF {AP-42 Table 1.4-1 (7/98)}
Control Efficiency: 0%
Calculations: 100 lb/MMSCF * 3.285 MMScf/yr* 0.0005 ton/lb = 0.164 ton/yr

CO Emissions**:**

Emission Factor: 84 lb/MMSCF {AP-42 Table 1.4-1 (7/98)}
Control Efficiency: 0%
Calculations: 84 lb/MMSCF * 3.285 MMScf/yr* 0.0005 ton/lb = 0.138 ton/yr

VOC Emissions**:**

Emission Factor: 5.5 lb/MMSCF {AP-42 Table 1.4-2 (7/98}
Control Efficiency: 0%
Calculations: 5.5 lb/MMSCF * 3.285 MMScf/yr* 0.0005 ton/lb = 0.009 ton/yr

SO_x Emissions**:**

Emission Factor: 0.6 lb/MMSCF {AP-42 Table 1.4-2 (7/98)}
Control Efficiency: 0%
Calculations: 0.6 lb/MMSCF * 3.285 MMScf/yr* 0.0005 ton/lb = 0.001 ton/yr

Still Vent

VOC Emissions**:**

Emission Factor: 0.2237 lb/hr {GRI-GLYcalc, EPA Approved Still Vent Emisssion Estimation Program)}
Control Efficiency: 0%
Calculations: 0.2237 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.980 ton/yr

HAPs Emissions**:**

Emission Factor: 0.0563 lb/hr {GRI-GLYcalc, EPA Approved Still Vent Emisssion Estimation Program)}
Control Efficiency: 0%
Calculations: 0.0563 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.247 ton/yr

Flash Tank Off Gas

VOC Emissions**:**

Emission Factor: 0.0.4544 lb/hr {GRI-GLYcalc, EPA Approved Still Vent Emisssion Estimation Program)}
Control Efficiency: 0%
Calculations: 0.4544 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.990 ton/yr

HAPs Emissions**:**

Emission Factor: 0.0563 lb/hr {GRI-GLYcalc, EPA Approved Still Vent Emisssion Estimation Program)}
Control Efficiency: 0%
Calculations: 0.0563 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.024 ton/yr

V. Existing Air Quality

The HPC Compressor Station is located approximately 12 miles north of Chinook in the SE¼ of the SE¼ of Section 19, Township 35 North, Range 20 East in Blaine County, Montana. Blaine County is unclassifiable/attainment for the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants.

VI. Ambient Air Impact Analysis

The potential emissions from HPC will be reduced through installation and operation of an NSCR and an AFR controller and because controlled emissions of all regulated pollutants from the proposed engine are relatively minor, the Department believes that the current permit action will not cause or contribute to any violation of the NAAQS.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Havre Pipeline Company, LLC
PO Box 2606
Havre, Montana 59501

Air Quality Permit Number: 3145-02

Preliminary Determination Issued: 07/01/04
Department Decision Issued: 07/19/04
Permit Final: 08/04/04

1. *Legal Description of Site*: The HPC station would remain located in the SE¼ of the SE¼ of Section 19, Township 35 North, Range 20 East in Blaine County, Montana.

2. *Description of Project*: Under the current permit action HPC proposed the replacement of the previously permitted 738-hp Waukesha 3521GSI compressor engine with a 250-hp Waukesha F11GSI rich-burn compressor engine.

3. *Objectives of Project*: Since initial permitting of the HPC compressor station, HPC's plans, objectives, and engine requirements at this compressor station location have changed. As a result, the installation and operation of a smaller unit for normal operations has been proposed by HPC. The current permit action would facilitate these needs.

4. *Alternatives Considered*: In addition to the proposed action, the Department considered the "no-action" alternative. The "no-action" alternative would deny issuance of the air quality preconstruction permit to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because HPC demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a BACT analysis, would be included in Permit #3145-02.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions would be reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and would not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics				X		Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats

Minor impacts to terrestrial and aquatic life and habitats would be expected from the proposed project because deer, antelope, coyotes, geese, ducks, and other terrestrials would potentially use the area around the facility and because the facility would be a source of air pollutants. The facility would emit air pollutants and corresponding deposition of pollutants would occur; however, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition would be minor. The potential impact of air pollutant emissions on terrestrial and aquatic life and habitats after this permit change would be less than the current potential because the proposed compressor engine would generate fewer emissions than the current engine. Overall, any impacts to terrestrial and aquatic life and habitats would be minor.

B. Water Quality, Quantity, and Distribution

Minor impacts would be expected on water quality, quantity, and distribution from the proposed project because the facility would be a source of air pollutants. No direct discharges into surface water would occur from operating the facility. However, minor amounts of water may be required to control fugitive dust emissions from the access roads and the general facility property. In addition, the facility would emit air pollutants and corresponding deposition of pollutants would occur. However, as described in Section 7.F. of this EA, the Department determined that any impacts from deposition would be minor. The potential impact of air pollutant emissions on water quality, quantity, and distribution after this permit change would be less than the current potential because the proposed compressor engine would generate fewer emissions than the current engine.

C. Geology and Soil Quality, Stability, and Moisture

Minor impacts would occur on the geology and soil quality, stability, and moisture from the proposed project because deposition of pollutants would occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor. The potential impact from air pollutant emissions on the geology and soil quality, stability, and moisture after this permit change would be less than the current potential because the proposed compressor engine would generate fewer emissions than the current engine. Overall, any impacts to the geology and soil quality, stability, and moisture would be minor.

D. Vegetation Cover, Quantity, and Quality

Minor impacts would occur to vegetation cover, quantity, and quality because the facility would be a source of air pollutants and corresponding deposition of pollutants would occur. However, as described in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor. The potential impact from air pollutant emissions on vegetation cover, quantity, and quality after this permit change would be less than the current potential because the proposed compressor engine would generate fewer emissions than the current engine. Overall, any impacts to vegetation cover, quantity, and quality would be minor.

E. Aesthetics

The proposed project would not result in any impact to the aesthetic nature of the area because the proposed project would not change the current industrial use of the area or the appearance of the facility. HPC would be replacing an existing internal combustion compressor engine located within an existing building with a new internal combustion compressor engine to be located within the same existing building.

F. Air Quality

The air quality of the area would realize minor impacts from the proposed project because the facility would emit the following air pollutants: PM_{10}; NO_x; CO; VOCs, including HAPs; and SO_x. However, the potential impact from air pollutant emissions on the air quality after this permit change would be less than the current potential because the proposed compressor engine would generate fewer emissions than the current engine. Further, the emission limits established as BACT for NO_x, CO, and VOCs under the current permit action would be lower than the allowable emissions under the existing permitted facility. Permit #3145-02 would also limit air emissions through opacity limitations on the proposed engine and the facility. Based on previous analysis of similar sources operating under similar conditions, the Department believes that the emissions resulting from the proposed engine would exhibit good dispersion characteristics resulting in lower deposition impacts to the affected area.

Overall, the Department determined that any air quality impacts from deposition would be minor due to dispersion characteristics of pollutants (stack height, stack temperature, etc.), the surrounding atmosphere (wind speed, wind direction, ambient temperature, etc.), and conditions placed in Permit #3145-02. In addition, the Department believes that emissions from the existing larger compressor engine are in compliance with all applicable air quality standards, as permitted under the existing permit. Therefore, since controlled potential emissions from the proposed smaller engine would be lower than current emissions and because the engine emissions would continue to exhibit good dispersion characteristics, the Department determined that the proposed project would maintain compliance with all applicable ambient air quality standards and any impacts to air quality from the proposed project would be minor.

G. Unique Endangered, Fragile, or Limited Environmental Resources

Although the proposed project would result in air pollutant emissions, the potential impact of air emissions on unique endangered, fragile, or limited environmental resources after this permit change would be less than the current potential because the proposed compressor engine would generate fewer emissions than the current engine. Since the proposed changes would result in a reduction in pollutant emissions, as discussed in Section 7.F, the Department determined that any impacts to any existing unique endangered, fragile, or limited environmental resource due to the deposition of air pollutants would be minor and less than current impacts under the existing permit. Overall, any impact to any existing unique endangered, fragile, or limited environmental resource in the proposed project area would be minor.

H. Demands on Environmental Resources of Water, Air, and Energy

The proposed project would have minor impacts on the demands for the environmental resources of air and water because the facility would be a source of air pollutants. Deposition of pollutants would occur as a result of operating the facility; however, as explained in Section 7.F of this EA, the Department determined that any impacts from deposition would be minor and less than existing impacts due to the reduction in potential emissions resulting from the current permit action.

The proposed project would have minor impacts on the demand for the environmental resource of energy because power would be required at the site. However, the impact on the demand for the environmental resource of energy would be minor because the current permit action would replace the existing compressor engine with a smaller, more energy efficient, engine. Overall, the impacts for the demands on the environmental resources of water, air, and energy would be minor.

I. Historical and Archaeological Sites

The proposed project would not result in any impact to any existing historical and archaeological sites in the proposed project area because the proposed new equipment would operate within an existing industrial area and would not require any additional construction. According to previous correspondence from the Montana State Historic Preservation Office, there is low likelihood of any disturbance to any known archaeological or historic site, given previous industrial disturbance within a given area. Therefore, the Department determined that the proposed project would not impact any existing historical or archaeological site.

J. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project on the physical and biological resources of the human environment in the immediate area would be minor because the predominant use of the surrounding area would not change as a result of the proposed project. In addition, the proposed project would result in lower air pollutant emissions than currently exist because the engine would be smaller and the emissions would be lower. Therefore, because the proposed compressor engine would generate fewer emissions, the potential impact from air pollutant emissions after this permit change would result in less cumulative and secondary impact to the area than the potential emissions currently permitted. Overall, the proposed replacement of the existing engine with a new smaller engine would reduce impacts in the area; therefore, no additional cumulative or secondary impacts would be expected as a result of the current permit action. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3145-02.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue			X			Yes
D	Agricultural or Industrial Production			X			Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities			X			Yes
G	Quantity and Distribution of Employment			X			Yes
H	Distribution of Population			X			Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECENOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores
B. Cultural Uniqueness and Diversity

The proposed project would not impact the social structures and mores or the cultural uniqueness and diversity of the area because no new construction would be required and the potential emissions would decrease. The predominant use of the surrounding area would not change as a result of the proposed project.

C. Local and State Tax Base and Tax Revenue

The proposed project would result in only a minor impact on the local and state tax base and tax revenue because the project would only slightly change current operations at the facility. Any economic impact to the area would be minor because the proposed project would not change typical operations at the facility. Further, the project would not require any new construction and only a limited number of existing employees/operators would be required for normal operations of the proposed equipment. Overall, any impact to local and state tax base and tax revenue would be minor as a result of the installation and operation of the proposed new equipment at the facility.

D. Agricultural or Industrial Production

The proposed project would not result in any impact to agricultural production or land use because the proposed project would operate within the existing HPC site, no additional construction or land disturbance would be required to accommodate the project, and the emissions from the proposed compressor engine are less than the currently permitted compressor engine. Further, the nature of the project would not result in additional industrial production. Overall, the proposed project would not result in any impact to agricultural or industrial production at HPC or in the area surrounding HPC.

E. Human Health

The Clean Air Act (CAA), which was last amended in 1990, requires EPA to set NAAQS for pollutants considered harmful to public health and the environment. The federal CAA established two types of NAAQS, Primary and Secondary. Primary Standards are limits set to protect public health, including, but not limited to, the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary Standards are limits set to protect public welfare, including, but not limited to, protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

Permit #3145-02 would include conditions and limitations that would require compliance with all applicable national and state air quality standards, including the federal primary and secondary standards. These standards are designed to be protective of human health. The Department believes that the existing HPC operations maintain compliance with applicable ambient air quality standards; therefore, because the proposed project would result in a decrease in potential emissions when compared to the existing HPC operations, the Department determined that the project would maintain compliance with the NAAQS/MAAQS. Any impact to human health would be minor because the potential impact of air pollutant emissions after this permit change would result in less impact to human health than the potential emissions currently permitted.

F. Access to and Quality of Recreational and Wilderness Activities

The project would not impact any access to or quality of any recreation or wilderness activities in the area because the proposed project would operate within the existing HPC site. Further, the resulting emissions from this project would be less than currently allowed.

G. Quantity and Distribution of Employment
H. Distribution of Population

The installation and operation of the proposed new equipment at the HPC site would require the use of existing HPC personnel for operations and would likely not require any new employees. Therefore, the proposed project would have little or no impact on the quantity and distribution of employment and population in the area.

I. Demands for Government Services

Government services would be required for acquiring the appropriate permits from government agencies. In addition, the permitted source of emissions would be subject to periodic inspections by government personnel. Demands for government services would be minor and consistent with current demands.

J. Industrial and Commercial Activity

The proposed project would result in only minor impacts on local industrial and commercial activity because the proposed project would be similar to existing activity at the HPC facility and would operate within the existing HPC site. Further, the proposed project would require only a small amount of new construction and would not result in additional industrial production.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals in the immediate area affected by the proposed project. The state standards would be protective of the proposed project area.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project on the economic and social resources of the human environment in the immediate area would be minor due to the fact that the predominant use of the surrounding area would not change as a result of the proposed project. Further, the proposed project would maintain similar operations to the existing site operations thereby not requiring new employment or additional employment or immigration to the area. Overall, the proposed replacement of the existing engine with a new smaller engine would not change day-to-day operations at the facility and the emissions would be less than what is currently allowed. Therefore, no additional cumulative or secondary impacts would be expected as a result of the current permit action. The Department believes that this facility could be expected to operate in compliance with all applicable rules and regulations as would be outlined in Permit #3145-02.

Recommendation: No EIS is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permit action is for the replacement of existing equipment at the HPC compressor station. Permit #3145-02 would include conditions and limitations to ensure the facility would operate in compliance with all applicable rules and regulations. In addition, as detailed in the above EA there are no significant impacts associated with the proposed project.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office.

EA prepared by: Carson Coate
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